Solidifying Infectious Waste

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Is it Legal to Solidify Infectious Waste?

It depends on the type of infectious waste.

Sharps – Wisconsin's infectious treatment standards allow sharps to be put into a landfill only after the sharps are both disinfected AND rendered unable to be reused, or after the sharps are incinerated in a medical waste incinerator. Products that encase sharps in a solid or gel-like substance do not meet this treatment standard. When put in a garbage truck, the solidified containers can break open and put landfill workers at risk of injury.

If you use products that encase sharps, you may not dispose of the waste in a landfill until the sharps have undergone infectious waste treatment. Therefore, the solidifying step is probably unnecessary.

Liquid infectious waste – It is legal to solidify liquid infectious waste, provided that the waste is disinfected. It is up to the waste generator to verify any claims of disinfection. Even though it is legal, please consider alternatives to solidifying liquid infectious waste, as described below.

What are the Alternatives for Disposing of Liquid Infectious Waste?

If your facility generates liquid infectious waste, the liquid may be a large proportion of the weight of infectious waste. The disposal alternatives for liquid infectious waste allowed under s. NR 526.11, Wis. Adm. Code, are:

- Incineration;
- steam disinfection (e.g., autoclaving, microwaving);
- chemical disinfection (e.g., products that disinfect and may solidify the waste); and
- discharge of liquid waste to the sanitary sewer system.

Most healthcare facilities don't have incinerators or on-site treatment facilities. Therefore they must send infectious waste off-site or decide between the two latter alternatives, that is, chemical disinfection or discharge to the sewer system. Of the three options, **it may be best to discharge liquid infectious waste directly to the sanitary sewer, based on both economic and environmental reasons.**

Sewering liquid infectious waste is inexpensive after your initial installation of equipment. Both off-site waste treatment and chemical treatment, on the other hand, require ongoing purchase of a service or product.

When comparing alternatives, be sure to consider less obvious costs of chemical treatment, which may include:

- purchase of liquid containers and waste bags;

- labor to purchase, move, use and store the chemical product, containers and bags;
- landfill tipping fees;
- record keeping for on-site treatment; and
- periodic tests on your treated waste, because it is up to you, the generator, to determine if a product actually disinfects your waste. (DNR has no authority or facilities for testing products itself.)

You might also consider these environmental considerations of chemical treatment:

- You are adding a chemical and discarding it.
- If your container (e.g., suction canister) is not full, you either waste chemical by adding too much or risk not disinfecting it by adding too little.
- You are discarding containers, which wastes materials and may violate Wisconsin's recycling laws [s. 287.07, WI Stats]. To find out more, see our publication "Waste Reduction and Recycling: A Guide for Wisconsin Healthcare" at http://dnr.wi.gov/org/aw/wm/publications/anewpub/WA1150.pdf
- The chemical, container and waste take up valuable space in landfills.
- Eventually the chemical will either leach to groundwater or be removed and go to surface water via a wastewater treatment plant.

It is much better environmentally to send only the waste down the drain directly to wastewater treatment plants, which are facilities specifically designed to break down biological wastes. You may:

- Re-plumb your building so that the liquid waste goes directly down the drain.
- Collect the liquid in reusable containers and rinse them. Manual rinsing is an option, but it adds labor costs and raises worker protection issues. Mechanical rinsing minimizes those concerns. Several systems are available.
- Collect the liquid in disposable containers, rinse them and recycle them.

One Wisconsin hospital found that re-plumbing the operating rooms paid for itself in a short time (about four years) compared to incinerating the waste on-site. Payback may be even faster compared to using chemicals and sending waste off-site for treatment. See the case study at http://dnr.wi.gov/org/caer/cea/publications/casestudy/casestudies/co082.pdf

The Minnesota Technical Assistance Program (MnTAP) researched ways to reduce suction canister waste and posted its findings here: http://mntap.umn.edu/health/91-Canister.htm

There are many in-line systems available for collecting liquid waste, so be sure to shop around. Also, check with your wastewater treatment plant operator. If you are unable to sewer your liquid waste, chemical disinfection may be the next best alternative.

Contact 608/266-2111 or DNRWasteMaterials@wisconsin.gov for further information.